Amendments to the Claims:

This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of Claims:

Claim 1 (original): A method for determining an orientation of an object, the method comprising:
acquiring an intensity image of the object;
generating at least a portion of a two-dimensional frequency response of the intensity image;
representing the at least a portion of a two-dimensional frequency response within a frequency space, the at least a portion of a frequency response providing features arranged in a spatial-frequency pattern within the frequency space; and
finding an orientation of the spatial-frequency pattern within the frequency space, thereby providing the orientation of the object.

a1

Claim 2 (original): The method of claim 1, wherein the intensity image is of a portion of the object.

Claim 3 (currently amended): The method of claim 1, wherein generating further includes:
generating the at least a portion of a two-dimensional frequency response of the intensity image by applying a frequency analysis tool to the intensity image.

Claim 4 (original): The method of claim 3, wherein generating the at least a portion of a two-dimensional frequency response of the intensity image includes:
generating at least a portion of a magnitude of a two-

dimensional discrete Fourier transform of the intensity image to provide the at least a portion of a two-dimensional frequency response.

Claim 5 (original): The method of claim 4, wherein the two-dimensional discrete Fourier transform includes a two-dimensional discrete fast Fourier transform.

Claim 6 (original): The method of claim 3, wherein generating the at least a portion of a two-dimensional frequency response of the intensity image includes:

generating at least a portion of a two-dimensional discrete cosine-transform of the intensity image to provide the at least a portion of a two-dimensional frequency response.

a1

Claim 7 (original): The method of claim 3, wherein generating the at least a portion of a two-dimensional frequency response of the intensity image includes:

generating at least a portion of a two-dimensional discrete sine-transform of the intensity image to provide the at least a portion of a two-dimensional frequency response.

Claim 8 (original): The method of claim 3, wherein generating the at least a portion of a two-dimensional frequency response of the intensity image includes:

generating at least a portion of a two-dimensional z-transform of the intensity image to provide the at least a portion of a two-dimensional frequency response.

Claim 9 (original): The method of claim 1, wherein representing further includes:

representing the at least a portion of a two-dimensional

frequency response as a logarithmically scaled frequency response within the frequency space.

Claim 10 (currently amended): The method of claim 1, wherein the frequency space is a frequency image, and wherein representing the at least a portion of a two-dimensional frequency response further includes:

scaling the at least a portion of a two-dimensional frequency response using a scaling function so as to enhance high frequency responses within the at least a portion of the two-dimensional frequency response to provide a scaled frequency response; and

mapping the scaled response by gray scale on the frequency image.

Claim 11 (original): The method of claim 1, wherein finding further includes:

applying an angle finding means to the frequency space to provide an angle of the spatial-frequency pattern.

Claim 12 (original): The method of claim 1, wherein finding further includes:

identifying the spatial-frequency pattern within the frequency space; and

finding the orientation of the spatial-frequency pattern.

Claim 13 (currently amended): The method of claim 1, wherein the ~~at least a portion of a two-dimensional frequency response provides~~ features form~~ing~~ a plurality of spatial-frequency patterns within the frequency space, and wherein finding further includes:

finding the orientation of the plurality of spatial-

frequency patterns.

Claim 14 (currently amended): The method of claim 1, wherein the ~~at least a portion of a two-dimensional frequency response provides~~ features forming a plurality of spatial-frequency patterns within the frequency space, and wherein finding further includes:

identifying one dominant spatial-frequency pattern from among the plurality of spatial-frequency patterns; and

finding the orientation of the dominant spatial-frequency pattern.

Claim 15 (original): The method of claim 14, wherein identifying further includes:

identifying as the dominant spatial-frequency pattern one spatial-frequency pattern of the plurality of spatial-frequency patterns that includes a greatest number of the features.

Claim 16 (currently amended): The method of claim 1, wherein the orientation of the object is at a constant offset from the orientation of the spatial-frequency pattern.

Claim 17 (original): The method of claim 16, wherein the constant offset substantially equals zero.

Claim 18 (currently amended): The method of claim 16, wherein the orientation of the object is defined by an orientation angle of an object feature on the object.

Claim 19 (original): The method of claim 1, wherein the spatial-frequency pattern includes a line, the line having a line angle, and wherein the orientation of the object is an object angle, the object angle having a constant offset from the line angle.

Claim 20 (original): The method of claim 19, wherein the object is a leaded object having leads, and wherein the orientation of the leaded object is defined by an orientation angle of one of the leads.

Claim 21 (original): The method of claim 19, wherein the object angle substantially equals an orientation angle of a surface mount object from an axis of the intensity image.

Claim 22 (original): The method of claim 1, further comprising:
inputting the orientation of the object into a subsequent image processing algorithm.

Claim 23 (currently amended): A method for determining an orientation of an object, the method comprising:
acquiring an intensity image of the object;
generating at least a portion of at least a two-dimensional frequency response of the intensity image, frequencies within the at least a portion of at least a two-dimensional frequency response forming a spatial-frequency pattern; and
finding an orientation of the spatial-frequency pattern, thereby providing the orientation of the object.

Claim 24 (currently amended): The method of claim 23, wherein generating further includes:
representing the frequencies within the at least portion of at least a two-dimensional frequency response within a frequency space, features within the frequency space forming the spatial-frequency pattern.

Claim 25 (currently amended): The method of claim 24, wherein the frequency space is a frequency image, and wherein representing the at least

a portion of at least a two-dimensional frequency response further includes:

scaling the at least a portion of at least a two-dimensional frequency response using a scaling function so as to enhance high frequency responses within the at least a portion of at least the two-dimensional frequency response to provide a scaled frequency response; and

mapping the scaled frequency response by gray scale on the frequency image.

Claim 26 (currently amended): The method of claim 23, wherein generating further includes:

generating the at least a portion of at least a two-dimensional frequency response of the intensity image by applying a frequency analysis tool to the intensity image.

Claim 27 (original): The method of claim 26, wherein generating the at least a portion of at least a two-dimensional frequency response of the intensity image includes:

generating at least a portion of a magnitude of at least a two-dimensional discrete Fourier transform of the intensity image to provide the at least a portion of at least a two-dimensional frequency response.

Claim 28 (original): The method of claim 23, further comprising:

acquiring a plurality of intensity images of the object at different depths within the object; and

generating a three-dimensional image containing a three-dimensional intensity representation of the object using the plurality of intensity images of

the object;

wherein generating the at least a portion of at least a two-dimensional frequency response of the intensity image further includes:

generating at least a portion of a three-dimensional frequency response by applying a frequency analysis tool to the three-dimensional image.

Claim 29 (currently amended): The method of claim 243, wherein the orientation of the object in the intensity image is at a constant offset from the orientation of the spatial-frequency pattern in the frequency space.

Claim 30 (original): The method of claim 29, wherein the orientation of the object is defined by an orientation angle of a feature on the object.

Claim 31 (original): The method of claim 23, wherein the spatial-frequency pattern includes a line, the line having a line angle, and wherein the orientation of the object is an object angle, the object angle having a constant offset from the line angle.

Claim 32 (original): An apparatus for determining an orientation of an object within an intensity image, the apparatus comprising:

frequency means adapted to generate at least a portion of at least a two-dimensional frequency response of the intensity image;

a frequency space adapted to receive the at least a portion of at least a two-dimensional frequency response, the at least a portion of a frequency response providing features arranged in a spatial-frequency pattern within the frequency

space; and

finding means adapted to find an orientation of the spatial-frequency pattern within the frequency space, thereby providing the orientation of the object.

Claim 33 (currently amended): The apparatus of claim 32, wherein the frequency means is further adapted to generate the at least a portion of at least a two-dimensional frequency response of the intensity image by applying a frequency analysis tool to the intensity image.

Claim 34 (original): The apparatus of claim 33, wherein the frequency means is further adapted to generate at least a portion of a magnitude of at least a two-dimensional discrete Fourier transform of the intensity image to provide the at least a portion of at least a two-dimensional frequency response.

Claim 35 (original): The apparatus of claim 32, wherein the frequency space is a frequency image, the apparatus further comprising:

scaling means, adapted to scale the at least a portion of at least a two-dimensional frequency response on the frequency space using a scaling function so as to enhance high frequency responses within the at least a portion of the two-dimensional frequency response and to provide a scaled frequency response; and

mapping means, in cooperation with the scaling means, adapted to map the scaled frequency response by grey scale on the frequency image.

Claim 36 (original): The apparatus of claim 32, wherein the orientation of the object in the intensity image is at a constant offset

from the orientation of the spatial-frequency pattern in the frequency space.

Claim 37 (original): The apparatus of claim 36, wherein the orientation of the object is defined by an orientation angle of a feature on the object.

Claim 38 (original): The apparatus of claim 32, wherein the spatial-frequency pattern includes a line, the line having a line angle, and wherein the orientation of the object is an object angle, the object angle having a constant offset from the line angle.

Claim 39 (original): A method for finding an orientation of an object, the method comprising:

acquiring an intensity image of the object;

applying a frequency analysis tool to the intensity image to produce at least a portion of a two-dimensional frequency response of the intensity image;

representing the at least a portion of a two-dimensional frequency response within a frequency space, the at least a portion of a frequency response providing features arranged in spatial-frequency pattern within the frequency space; and

determining an orientation of the spatial-frequency pattern to provide the orientation of the object.

Claim 40 (original): The method of claim 39, wherein applying the frequency analysis tool includes:

generating at least a portion of a magnitude of a two-dimensional discrete Fourier transform of the intensity image to provide the at least a portion of a two-dimensional frequency response.

Claim 41 (currently amended): The method of claim 39, wherein the frequency space is a frequency image, and wherein representing the at least a portion of a two-dimensional frequency response further includes:

scaling the at least a portion of a two-dimensional frequency response using a scaling function so as to enhance high frequency responses within the at least a portion of the two-dimensional frequency response to provide a scaled frequency response; and

mapping the scaled response by gray scale on the frequency image.

Claim 42 (original): The method of claim 39, wherein the orientation of the object in the intensity image is at a constant offset from the orientation of the spatial-frequency pattern in the frequency space.

Claim 43 (original): The method of claim 42, wherein the orientation of the object is defined by an orientation angle of a feature on the object.

Claim 44 (original): The method of claim 39, wherein the spatial-frequency pattern includes a line, the line having a line angle, and wherein the orientation of the object is an object angle, the object angle having a constant offset from the line angle.

Claim 45 (new): The method of claim 1, wherein finding the orientation of the spatial-frequency pattern further includes:

processing the frequency space as a second image to find the orientation of the spatial-frequency pattern therein.

Claim 46 (new): The method of claim 1, wherein representing the at

least a portion of a two-dimensional frequency response further includes:

interpreting the features of the at least a portion of a two-dimensional frequency response within the frequency space as image features in a second intensity image.

Claim 47 (new): The method of claim 1, wherein finding the orientation of the spatial-frequency pattern further includes:

conducting a pattern analysis on the features.

Claim 48 (new): The method of claim 1, wherein the features in the frequency space are formed from uv data and finding the orientation further includes:

interpreting the uv data as a second intensity image to find the orientation of the spatial-frequency pattern therein.

Claim 49 (new): The method of claim 23, wherein finding the orientation further includes:

representing the spatial-frequency pattern in a frequency space; and

processing the frequency space as a second intensity image to find the orientation of the spatial-frequency pattern therein.

Claim 50 (new): The apparatus of claim 32, wherein the finding means is further adapted to processes the frequency space as a second intensity image to find the orientation of the spatial-frequency pattern.

Claim 51 (new): The apparatus of claim 32, wherein the features within the frequency space are image features of a second intensity image.

Claim 52 (new): The apparatus of claim 32, wherein the finding means is

further adapted to conduct a pattern analysis on the features.

Claim 53 (new): The method of claim 39, wherein representing the at least a portion of a two-dimensional frequency response further includes:

interpreting the features of the at least a portion of a two-dimensional frequency response within the frequency space as image features in a second intensity image.

Claim 54 (new): The method of claim 39, wherein determining the orientation of the spatial-frequency pattern further includes:

conducting a pattern analysis on the features.